# Conclusion

**This is for Part I only – it needs to be combined with part 2 to conclude.**

The report has presented the mathematical foundations for fitting the diffusion tensor using diffusion-weighted MRI data. It highlighted the importance of solving an overdetermined least-squares problem, as well as the importance of managing invalid data, ensuring accurate and robust diffusion tensor estimation. Properly addressing these concerns regarding data quality ensures validity and enhances the reliability of derived diffusion metrics, reinforcing the utility of diffusion tensor imaging for both diagnostic and research applications.

# Reference

Allen, D. E. (2019). *Diffusion tensor imaging*. MRIquestions. <https://mriquestions.com/dti-tensor-imaging.html>

Jiang, H., Van Zijl, P. C., Kim, J., Pearlson, G. D., & Mori, S. (2006). DtiStudio: resource program for diffusion tensor computation and fiber bundle tracking. *Computer Methods and Programs in Biomedicine, 81*(2), 106–116. <http://individual.utoronto.ca/ktaylor/DTIstudio_mori2006.pdf>

Lee, K. C., Ho, J., & Kriegman, D. J. (2005). *The Extended Yale Face Database B*. UCSD Computer Vision. <http://vision.ucsd.edu/~iskwak/ExtYaleDatabase/ExtYaleB.html>